

## WHAT IS CLAIMED:

1. A purified nucleic acid comprising SEQ ID NO 9, or the complement thereof.

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2. The purified nucleic acid of claim 1, wherein said nucleic acid comprises a sequence encoding SEQ ID NO 9.

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3. The purified nucleic acid of claim 1, wherein said nucleotide sequence encodes a polypeptide consisting of SEQ ID NO 10.

4. A purified polypeptide comprising SEQ ID NO 10.

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5. The polypeptide of claim 4, wherein said polypeptide consists of SEQ ID NO 10.

6. An expression vector comprising a nucleotide sequence encoding SEQ ID NO 10, wherein said nucleotide sequence is transcriptionally coupled to an exogenous promoter.

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7. The expression vector of claim 6, wherein said nucleotide sequence comprises SEQ ID NO 9.

8. The expression vector of claim 6, wherein said nucleotide sequence consists of SEQ ID NO 9.

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9. A method of screening for compounds that bind selectively to PHKA2sv7 comprising the steps of:

- (a) providing a PHKA2sv7 polypeptide comprising SEQ ID NO 10;
- (b) providing one or more PHKA2 isoform polypeptides that are not

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PHKA2sv7;

(c) contacting said PHKA2sv7 polypeptide and said PHKA2 polypeptide that is not PHKA2sv7 with a test preparation comprising one or more compounds; and

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(d) determining the binding of said test preparation to said PHKA2sv7 polypeptide and to said PHKA2 polypeptide that is not PHKA2sv7, wherein a preparation that

binds to said PHKA2sv7 polypeptide but does not bind to said PHKA2 polypeptide that is not PHKA2sv7 contains a compound that selectively binds to said PHKA2sv7 polypeptide.

10. The method of claim 9, wherein said PHKA2sv7 polypeptide is obtained  
5 by expression of said polypeptide from an expression vector comprising a polynucleotide encoding SEQ ID NO 9.

11. A method of screening for a compound able to bind a PHKA2sv7 or a  
fragment thereof comprising the steps of:

10 (a) expressing a PHKA2sv7 polypeptide comprising SEQ ID NO 10 or  
fragment thereof from recombinant nucleic acid;

(b) providing to said polypeptide a labeled PHKA2 ligand that binds to  
said polypeptide and a test preparation comprising one or more test compounds; and

15 (c) measuring the effect of said test preparation on binding of said  
labeled PHKA2 ligand to said polypeptide, wherein a test preparation that alters the binding of  
said labeled PHKA2 ligand to said polypeptide contains a compound that binds to or interacts  
with said polypeptide.

12. The method of claim 11, wherein said steps (b) and (c) are performed *in*  
20 *vitro*.

13. The method of claim 11, wherein said steps (a), (b) and (c) are performed  
using a whole cell.

14. The method of claim 11, wherein said polypeptide is expressed from an  
25 expression vector.

15. The method of claim 14, wherein said expression vector comprises SEQ  
ID NO 9 or a fragment of SEQ ID NO 9.

16. The method of claim 11, wherein said test preparation contains one  
30 compound.

17. The method of claim 11, wherein said PHKA2 ligand is a phosphorylase  
35 kinase inhibitor.